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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,939	01/30/2004	Fumito Nariyuki	FS-F03228-01	4131
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TAIYO CORPORATION 401 HOLLAND LANE #407 ALEXANDRIA, VA 22314			EXAMINER CHEA, THORL	
			ART UNIT	PAPER NUMBER
			1752	

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/766,939

Applicant(s)

NARIYUKI, FUMITO

Examiner

Thorl Chea

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 March 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 21-26 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-14 and 21-26 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is responsive to the request for Continued Examination on March 20, 2006; claims 1-14, 21-26 are pending in this instant application; claims 15-20 have been canceled.

2. The certified translation of the foreign priority document on March 21, 2006 obviates the rejection of claims 1-26 under 35 USC 102(e) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Ohezeki et al (US 2004/0033454) set forth in the office action of record. The rejection is therefore withdrawn.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 13 recites the limitation " the laser" in "the laser has ..." There is insufficient antecedent basis for this limitation in the claim.

#### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okada et al (US Patent No. 6,210,983). See the process for forming an image in photothermographic material comprising an image-wise exposing to radiation source and thermally developing the image-wised exposed material with a developing time from 1 to 180 second at the temperature 80 °C to 250 °C (column 44, lines 42-53). The photothermographic material contains an organic silver salt, a photosensitive silver halide, a reducing agent and a compound of the formula X-L<sub>1</sub>-D wherein D is an electron donative group, X is an adsorption promoting group to silver halide, and L<sub>1</sub> is a valent bond or a linking group (abstract and columns 3-22). The silver halide includes silver iodide and silver iodobromide having silver iodide content 0.1 to 40 mole % (column 36, lines 3-17).

The thermally developing time of 1-12 seconds overlaps the thermally developing time of Okada et al of 1 to 180 seconds; the compound of formula (I) A-(W)<sub>n</sub>-B encompasses the scope of the compound of formula (I) in column 3, line 20, especially the exemplified compound of formula in columns 13-14, compounds 7, 8, 9, and column 18, compound 42; the silver halide having silver iodide content from 40 to 100 mole % encompasses the scope of silver iodobromide having silver iodide content 1-40 mole % and silver iodide taught in Okada et al in column (column 36, lines 3-17). The silver iodobromide having silver iodide 40 mole % is preferred by Okada et al. Therefore, the time, the silver iodide and the compound of formula (I) taught Okada et al overlaps the time, the silver iodide and the compound of formula (I) of the present claimed invention, and the claimed invention lacks novelty. Alternatively, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to

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develop the material within the time disclosed in Okada et al in combination with the use of preferred silver iodobromide having silver iodide content of 40 mole % in combination with the compound exemplified therein to provide an invention as claimed.

8. Claims 1-7, 9-12, 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al (US Patent No. 6,210,983) and Siga et al (US Patent No. 4,332,889).

Okada et al disclose a process for forming image in a photothermographic material comprising an image-wise exposing to radiation source and thermally developing the image-wised exposed material with a developing time from 1 to 180 second at the temperature 80 °C to 250 °C (column 44, lines 42-53). The photothermographic material contains an organic silver salt, a photosensitive silver halide, a reducing agent and a compound of the formula X-L<sub>1</sub>-D wherein D is an electron donative group, X is an adsorption promoting group to silver halide, and L<sub>1</sub> is a valent bond or a linking group (abstract and columns 3-22). The silver halide includes silver iodide and silver iodobromide having silver iodide content 0.1 to 40 mole % (column 36, lines 3-17). The silver halide should preferably have a smaller grain size for the purpose of minimizing white turbidity after image formation, preferably 0.01 micron to 0.15 micron (column 35, lines 37-51). The preferred reducing agent is hindered phenol and bisphenols (column 38, lines 45-50 and column 39, lines 30-33). See also toning agent is disclosed in column 39, lines 40-68 to column 40, lines 1-20; the mecapto compound for retarding or accelerating development in column 40, lines 20-25; the ultra-high contrast agent such as hydrazine in column 42, lines 66-67 to column 43, lines 1-43; the matting agent in column 26, lines 21-67; and antifoggants including halogen-substituted organic compound in column 42, lines 27-53. Okada discloses the silver halide including silver iodide and silver iodobromide having silver iodide content from

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0.1 to 40 mole % and the a compound of formula X-L<sub>1</sub>-D. The silver iodide and silver iodide overlaps the scope of silver halide having silver iodide content of 40 mole % to 100 mole % present in the claimed invention. The scope of silver iodide in Okada et al is considered as silver halide having 100 mole % of iodide and the upper limit of silver iodide content (40 mole %) in silver iodobromide taught in Okada et al overlaps 40 mole % of the silver iodide content claimed in the present claimed invention. The compound of formula (I) and the scope of the compound presented in claim 24 are within the scope of generic formula X-L<sub>1</sub>-D taught in Okada et al.

Siga disclose in column 6, lines 43-68 disclose the relative amount of the silver iodide with respect to silver bromide to satisfy the sensitivity condition and storage condition. It is disclosed that "from the view point of sensitivity of image forming material, the silver halide is desired to contains, beside silver iodide, at least 2 mole %, based on silver halide component, silver bromide and/or silver chloride, although the silver halide may include only silver iodide, i.e. 100 mole % of silver iodide. Furthermore, from view point of stability of the raw image forming material, it is desired that silver halide component contains, besides silver iodide, silver bromide than silver chloride. Therefore, the most preferred silver halide component consists of silver iodide and silver bromide. In this case, silver iodide and silver bromide may be provided in either a mixture thereof or mixed crystals thereof. The molar ratio of silver iodide to silver bromide may be preferably 30/70 to 98/2, more preferably 50/50 to 95/5."

Therefore, it would have been obvious to the worker of ordinary skill in the art at the time the invention was made to provide an image using a photothermographic material using either silver iodide or silver bromide having silver iodide within the range 0.1 to 40 mole % or higher

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such as taught in Okada et al and Siga et al in combination with the compound of formula X-L<sub>1</sub>-D such as taught in Okada et al, and thereby provide a process as claimed.

9. Claims 8, 14, 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Okada et al (US Patent No. 6,210,983) and Siga et al (US Patent No. 4,332,889) as applied to claims 1-7, 9-12, 15-24 above, and further in view of Toya et al (US Patent 5,656,419). The polyhalogenate compound and the bisphenols reducing agent is taught Toya et al in column 28, claims 14-15 and the is disclosed in column 20, formula (A). It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use a known antifoggant and reducing agent taught Toya et al such as suggested in Okada et al, and thereby provide a process as claimed.

10. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Okada et al (US Patent No. 6,210,983) and Siga et al (US Patent No. 4,332,889) as applied to claims 1-7, 9-12, 15-24 above, and further in view of Toya et al (US Patent No. 5,998,126). Okada et al may not disclose the use of laser beam that has light emission peak intensity within a wavelength range from 350 to 450 nm in claim 13, but Toya et al in column 2, lines 1-12 disclose to expose the photothermographic material using semiconductor diode producing wavelength from 300 nm to less than 700 nm. It would have been obvious to the worker of ordinary skill in the art at the time the invention was made to use laser available inexpensive semiconductor laser diode taught in Toya et al with a reasonable expectation of little obstruction encountered in reading a transmission image even when a sensitizing dye or dyesstuff having  $\lambda_{\text{max}}$  in this wavelength left in the photographic material.

***Response to Arguments***

11. Applicant's arguments filed March 21, 2006 have been fully considered but they are not persuasive because of the reason set forth in the rejection above. The applicants argue that :

In the Okada patent, examples of silver iodide are disclosed as types of silver halide that can be used, there is disclosure of concrete examples of compounds represented by general formula (1), among which there are compounds corresponding to the adsorbable reducing agent represented by Formula (1) of the present application, and there is disclosure of a light exposure time of 10 to 90 seconds. However, these descriptions are only general descriptions and are described independently from each other. If these were arbitrarily combined at the present time, they would correspond to the conditions of present claim 1, but there is no concrete disclosure regarding a combination of these three features in the Okada patent. In other words, a concrete combination would be the combination of a silver iodobromide (with an average silver iodide content of 2 mol%) disclosed in the Examples, several concrete examples of Formula (1), and a light exposure time of 15 seconds.

The argument appears to be well-taken. Okada suggests the silver iodide and silver iodobromide containing silver iodide 40 mole %. It would have understood that silver iodide disclosed in Okada is pure silver iodide within the scope of silver halide containing 100 mole % silver iodide content. Therefore, Okada disclose silver iodobromide containing 40 mole % iodide and pure silver iodide which encompasses the scope of silver halide having silver iodide content of 40 mole % to 100 mole % presented in the claimed. Okada may not exemplified the use of silver iodobromide containing 40 mole % silver iodide or pure silver iodide disclosed therein, but the selection of silver halide would have been found obvious to the worker of ordinary skill in the art due to the teaching in Siga et al. Siga et al disclose the use of silver halide containing high silver iodide content provide a photothermographic material with stability of the raw image forming material and the silver halide with high bromide content provide photothermographic material with high sensitivity. Therefore, the worker of ordinary skill in the art would adjust the composition of silver halide in term of silver bromide and silver iodide accordingly to the



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intended results, i.e., sensitivity or raw stability of the raw image forming material. The compound of formula (I)  $A-(W)_n-B$  presented in the claimed invention is within the scope of Okada, formula (I) in column 3 and the exemplified compound in columns 13-14 such as formula 7, 8, 9-11. In terms of processing step, Okada et al in column 44, lines 41-68 discloses that the photosensitive material of the present invention may be developed by any desired method although it is generally developed by heating after imagewise exposure. The preferred developing temperature is about 80 to 250 °C, more preferably 100 to 140 °C and the preferred development time. Therefore, the worker of ordinary skill in the art would adjust the time relatively to the temperature within the range

The applicants further argue that the results shown in Table A of the Declaration, it is understood that, compare with image forming method in which light exposure is carried out for 15 second with respect to a photosensitive material using silver iodobromide emulsion having a silver iodide content of 2 mole % together with a compound in the Okada Patent, sensitivity reduction in an unexposed photosensitive material during storage is remarkably suppressed, to an unexpected degree, in the image forming method of the present invention in which light exposure is carried out for 12 second with respect to photosensitive material using a silver halide emulsion having silver iodide content 40 mole % or higher together with adsorbable reducing agent represented by formula (I) of the present application.

The Declaration under 37 CFR 1.132 submitted on March 20, 2006 is not persuasive. First, invention in claims 1-4 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okada et al (US Patent No. 6,210,983). The Declaration under 37 CFR 1.132 is irrelevant to the rejection under 35 U.S.C. 102(b). "(E)vidence of

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secondary considerations, such as unexpected results or commercial success, is irrelevant to 35 U.S.C 102 rejections and thus cannot overcome a rejection so based. In *re Wiggins*, 488 F.2d 538, 543, 179 USPQ 421, 425 (CCPA 1973). Second, the Declaration is insufficient to overcome the *prima facie* case of obviousness rejection set forth above since i) it would have been expected by the worker of ordinary skill in the art that the material containing high silver iodide content would result in raw stability of the raw image forming material such as taught in *Siga et al*; ii) the Declaration fails to disclose the type of radiation used in the imagewise exposure or the temperature using in the heating steps. The present of heating time is insufficient to determine the criticality of the processing step since the time and temperature of heating are relative, i.e., short time may require higher temperature to produce enough silver image density; iii) the results are not commensurate with the scope of the claimed invention. The thermally developing the imagewise exposure require 1 to 12 second while the Declaration shows thermally development time at 12 seconds, and thus, it is not apparent and applicants have not explained, why one of ordinary skill in the art would have extrapolated the results obtained to plethora of combination encompassed by the claimed invention. *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971); iv) the results in the Declaration is not found unexpected by the worker of ordinary skill in the art. See page 6, first paragraph of the Declaration which stated that “ (t)he present application is remarkably superior in raw stability, to an unexpected degree”. Therefore, it is unclear as to what degree it would have been found unexpected; v) the difference between the inventive results and the comparative results found to be relatively small, between 3-5 % which within an error range; vi) “ The data is not reasonably commensurate in scope with the claims, which, as drafted, are broad in scope and cover mixtures of numerous untested

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compounds. Lindner, 457 F. 2d at 508, 173 USPQ at 358.” . See the scope of the compounds of formula (I), which cover different, group B1 to B13 and A can be any adsorbable groups including that disclosed in Okada.

*Conclusion*

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thorl Chea whose telephone number is (571) 272-1328. The examiner can normally be reached on 9 AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia H. Kelly can be reached on (571)272-1526. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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2006-05-05

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